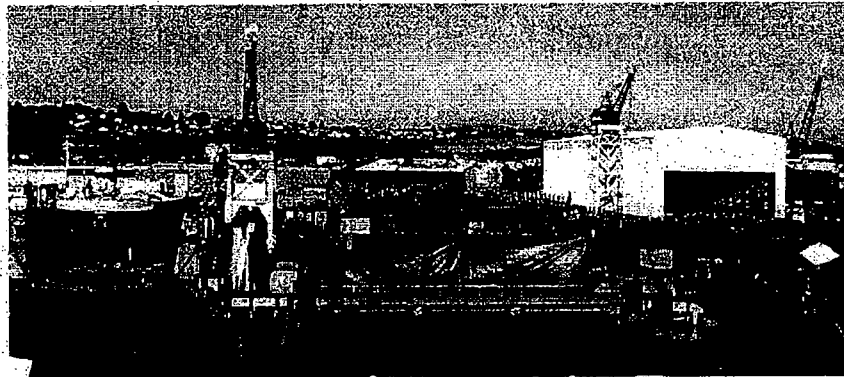


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08/01/88



HARTCROWSER

Earth and Environmental Technologies



***Proposal for Environmental
Assessment and Site Mitigation
Former Marine Power and
Equipment Company Site
Seattle, Washington***

***Prepared for
First Interstate
Bank of Washington***

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Summary



SUMMARY

Hart Crowser, Inc. is pleased to provide this proposal to conduct an environmental assessment of the Marine Power and Equipment Company (MPE) site and perform initial mitigative measures for First Interstate Bank of Washington. We have reviewed the available data on the history of the MPE property and we have conducted site visits to establish the salient environmental concerns that need amelioration.

Our approach to the proposed scope of work will address the potential contamination issues as follows:

- o Drums of hazardous waste and probable asbestos containing material (ACM) were observed on the site;
- o Two approximately 2,000-gallon underground storage tanks holding gasoline and diesel have been on the site for about 10 years;
- o Numerous areas of oil-stained and discolored surface soil were observed on the site in historical areas of chemical use and waste storage;
- o Machine shops, paint manufacturing, and shipbuilding and repair have been the major industrial uses in the site history which have potentially introduced contaminants to the property;
- o The slough and associated sediments of the Duwamish Waterway known as Slip Number 3 has been a major receptor of any contaminant release off the land property. It represents an area of high liability



due to present regulatory activity related to sediment contamination.

An assessment of the property will provide an understanding of the impacts of past releases to the surface soil, subsoil, groundwater, and slough sediments. The data from chemical analysis of samples from these areas will profile the site contamination and migration pathways, and allow an evaluation of liability to the property owner for potential cleanup or regulatory action. Mitigative measures such as properly disposing of drums of hazardous chemicals from the site and removing underground storage tanks will pro-actively address areas of high liability and reduce their impact as negative assets to the property value.

To mitigate existing conditions, establish a baseline for contamination that exists on the property, and identify cleanup issues and the associated liability for owners of the property, we propose the following work:

- o Drums and containers of hazardous materials on the site will be identified and disposed of by an EPA-permitted hazardous waste contractor;
- o An asbestos survey will identify ACM in the facility structures;
- o Underground storage tanks will be removed from the property and associated soil contamination issues identified, if present;



- o Surface soil samples will be collected and analyzed from four contaminated areas on the site associated with past releases of product or waste;
- o Subsurface soil samples will be collected and analyzed from borings in the areas of present and past concern to establish the vertical extent on contamination;
- o Groundwater monitoring wells will be installed in locations downgradient from contaminated areas to determine impacts to groundwater and potential for migration pathways;
- o Existing data on Duwamish Waterway sediment quality will be acquired and reviewed to suggest the environmental status of Slip 3 sediments. This information will be interpreted in terms of cost implications for disposal of Slip 3 dredge spoil disposal.
- o As an option, Slip 3 sediments could be collected and chemically analyzed to quantitatively determine on-site sediment contamination, and address real cost concerns for sediment/dredge spoil disposal under current and future regulations; and
- o The chemical data characterizing the site contamination will be evaluated and presented in a formal report. Data will be interpreted in terms of migration pathways which can be conceptualized from the project data. The report will address cleanup requirements likely to be required under regulatory



FIRST INTERSTATE BANK
OF WASHINGTON

Summary

action and risk issues to human and environmental health from the site which present high liability to property owners.

Statement of Understanding



STATEMENT OF UNDERSTANDING

Property History	<p>The MPE site is located at 6701 West Fox Avenue on three land parcels which comprise the shipyard. Figure 1 shows the site location and a schematic map of the property and land parcel areas. The property boundary includes a portion of Slip Number 3, an extension of the present Duwamish Waterway, which was part of the original riverbed.</p> <p>Part of the MPE site was generated by fill activity around 1913 from dredging and realignment of the Duwamish River. From the 1920s to the 1940s, Parcel A was used for wood product storage and paint manufacturing. Parcel C was occupied from 1917 to the late 1950s by companies building marine, mining, mill, and dredging machinery. A wholesale seafood operation occupied the project site starting in the early 1960s. Figure 2 shows the names and locations of these historical operations. By the 1970s, the site had been returned to shipbuilding and repair activities by MPE which continued until the bankruptcy in 1986.</p>
Environmental Agency Interests	<p>Regulatory agency files (EPA/Ecology -1987) record shipbuilding activities by MPE on the site starting in 1967. The agencies' interest in the site since about 1985 is focused toward discharges of wastewaters to the Duwamish Waterway from stormwater drainage and chemical waste material releases during shipbuilding and repair activities from the facility and dock structures. Agency records show concern for environmental impacts related to the storage and use of hazardous chemicals (solvents, cleaners), abrasive</p>



sandblasting material, and petroleum products (hydraulic fluids, grease, oils, etc.) during shipbuilding and repair. In particular, the agencies initiated a series of enforcement actions in 1985 against MPE for handling practices associated with abrasive blast material which was released to the Duwamish Waterway.

Another area of concern for the sediments in Slip Number 3 is the potential presence of tributyltin (TBT) which has been historically used as an antifouling biocide in commercial marine paints. Limited data on levels of TBT in the Duwamish Waterway are available from the U.S. Army Corps of Engineers (Corps), Seattle District. It is probable that submerged sediments in proximity to ship maintenance activities at the site have TBT concentrations at least as high as other areas of the Duwamish Waterway studied by the Corps.

**Property
Environmental
Liabilities**

Due to it's financial situation, MPE went into bankruptcy proceedings and discontinued its primary operations at the site. However, environmental interest by the agencies in the site and associated sediments remains an unresolved issue and presents a potential for high liability to owners of the property. In fact, Ecology and EPA are presently developing regulations to require cleanup of Puget Sound Sediments to meet minimum sediment quality levels. Standards for sediment levels are expected to be in force by June 1989 for sediments of the Puget Sound area, including the Duwamish Waterway. Cleanup enforcement for addressing existing contaminated sediments and dredge material disposal will be incorporated into state permit procedures for industrial sites on state waterways, including NPDES,



dredging, and shoreline construction permits.

Therefore, any future owner of the MPE property will be affected by these pending regulations which will substantially increase operating/development costs and permit procedure requirements associated with the site. In other words, the liability involved with the status of the Slip 3 sediments will be a real issue for purchasers of the property.

The historical and present uses of the property suggest probable contamination of subsurface soil and possible contamination of groundwater from past placement of Duwamish Waterway dredge fill material on site, and from materials used and released from the past lumber and paint manufacturing and recent shipbuilding operations. Solvents, wood treatment preservatives, degreasing compounds, heavy metals, waste oils, and oil impurities were probably released on-site and have potentially migrated with surface drainage and site groundwater into the Duwamish Waterway. During a site walk of the property Hart Crowser representatives observed storage of approximately 30 drums of hazardous waste; and the presence of two underground storage tanks and numerous areas of oil-stained soil or surface areas on the property. These conditions present liability and associated risk for environmental contamination to owners of the property.

**Assessment
Rationale**

A site assessment is necessary to evaluate the environmental condition of the property and sediments and determine the impacts of historical practices. An assessment as detailed in this proposal will produce an environmental profile for the property. It will



establish the known environmental impacts of past operations, and characterize the status of site contamination and associated liability for present and future (purchaser) owners. Specifically, our proposal will accomplish three primary objectives:

- o Classification and/or disposal of drums and chemical waste containers, and other on-site hazardous materials;
- o Removal of old underground storage tanks and identification of any cleanup requirements associated with the tank area; or, as an option, determine the integrity of the existing tanks through soil gas survey and tank tightness testing; and
- o Providing an indication of the subsurface soil and groundwater quality; an evaluation of submerged sediments quality, and a conceptual model of the subsurface conditions, migration pathways, and transport mechanisms on the site.

We feel that the environmental status of Slip 3 sediments is a real liability issue to owners of the property. However, a definitive chemical evaluation of the sediments would be a costly undertaking. Task 6B details this effort and is presented as an option for First Interstate. The merit of this expenditure of funds must be weighed against the uncertainty of a qualitative assessment of sediment quality based on existing data and information as offered for lower costs in Task 6A.

Scope of Work



PROPOSED SCOPE OF WORK

Background This scope of work was developed in part from Hart Crowser site visits by Ron Hart, Rick Pierce, and John Funderburk. A historical review of site information by Hart Crowser (HC report J-1863), and a review of a Weston assessment report (June 27, 1988) of the property have determined our approach in addressing the environmental issues of the site. Photographs were taken to document observations from site visits to the property and are included in Appendix A. The following text describes the eight tasks which we would undertake to characterize environmental contamination on the MPE site, and initiate mitigative measures for pressing environmental problems.

Task 1 Site Visit, Drum Sampling/Disposal, Asbestos Survey -
Two areas of drum waste storage were observed on the site and are pictured in photographs 1, 2, 3, 6, 7, and 8 in Appendix A. During the project site visit, 25 drums (55-gallon) and 40 containers (1- and 5- gallon) of hazardous waste materials accumulated on the property will be sampled to identify their contents for proper disposal. At the time of this site visit, Hart Crowser will also survey the building interiors and their insulation materials for the presence of suspected asbestos containing material (ACM). Representative samples (up to 10 total samples) will be collected from materials visually observed and suspected to be ACM.

For drum sampling, identification, and disposal, Hart Crowser will work with Northwest EnviroServices (NWES), an EPA-permitted Treatment, Storage, and



Disposal (TSD) facility located in Seattle. A bid for drum testing and disposal is included in Appendix B.

Analytical costs for identification of waste materials on the site will be kept to a minimum by pre-screening samples and compositing like materials for analysis. Analytical tests on the composited samples will be limited to only the parameters necessary to determine the proper, legal disposal of the materials. For budgeting purposes, 35 samples will be characterized so that all 65 drums/containers observed on the site are properly disposed of.

Disposal costs for the drum/container contents cannot be determined until the identity of the materials is known. However, disposal costs by chemical category can be projected for the likely materials stored on the site. A cost projection for drum disposal is discussed in the COST AND SCHEDULE section of the proposal. The disposal plans for the drums will be discussed with First Interstate when sample identification is completed and recommendations can be made. Authorization for costs for transporting the drums to appropriate disposal will be requested. Disposal costs for identified drums by chemical and content category is quoted by NWES as follows:



Disposal of Full Drums		
55-gallon - Chlorinated material		\$635/drum
5-gallon - Chlorinated material		\$ 50/drum
Disposal of Full Drums		
55-gallon - Non-chlorinated material		\$158/drum
5-gallon - Non-chlorinated material		\$ 25/drum
Disposal of Empty Drums (washout residual)		
55-gallon		\$ 40/drum
5-gallon		\$ 25/drum

Task 2A

Proposed

Option

Underground Storage Tanks - Tank Removal Option-

Proposed regulations (Federal Register Vol. 52, No. 74 - April 17, 1987) by the EPA for controlling potential leaks from underground storage tanks (40 CFR Parts 280 and 281) impose a matrix system of requirements for modifying tank installation which is illustrated on Figure 3. A property owner will be required to implement overfill protection, corrosion prevention (cathodic protection), tank tightness testing, and/or a leak detection system for the MPE site tanks over the next few years.

Approximate costs for meeting the regulatory requirements would range between \$9,000 and \$12,000 and is detailed as follows:

Overfill Protection	\$1,000
Cathodic Protection	\$8,000
Tank Tightness Testing	\$1,000
Tank Leak Detection System	\$2,000

Because the tanks on-site are over 10 years old and are located in soil conditions likely to accelerate corrosion leading to leaks and product release, Hart Crowser recommends that the tanks be removed and disposed of. The expenditure of roughly \$7,500 for tank



removal is a great savings over what would be viewed as a \$12,000 negative asset to potential purchasers of the property if tanks are left in place.

At the time that the tank removal effort is effected, potential product releases in the area of the tanks can be evaluated and addressed in the process of tank/soil excavation. By this method, drilling costs of approximately \$3,200 for obtaining and analyzing soil samples around the tank will be obviated.

For the removal of the tanks at the MPE site, Hart Crowser will subcontract the services of Olympus Construction. A bid for tank removal is included in Appendix C. The concrete cover over the tanks will be cut apart and removed to a convenient location on the site. Soils around the tanks will be excavated and stockpiled in an area adjacent to the tanks and covered with plastic. Excavated soil will be tested for product residues. The tanks are expected to be free of product at the time of removal. If the tanks contain petroleum products from previous use, the material will be removed at additional cost. The tank residues will be cleaned out, and the tanks inerted, and inspected by a county fire marshal. Upon fire marshal authorization, the tanks will be removed from the excavation, inspected for leaks, and transported to metal recycle.

The excavation pit bottom and side walls will be sampled for product residues. To assess the soil quality surrounding the tanks at the MPE site, two to five samples will be collected from the excavation walls and bottom. One sample will also be collected from the



soils stockpile. If there is no visible soil staining or discoloration (i.e., petroleum product) a composite sample will be taken from the excavation walls. Otherwise, a sample will be taken from each excavation wall. All samples will be forwarded to a testing laboratory and analyzed for total petroleum hydrocarbons (TPH) by method 418.1. One sample will also be analyzed for a GC/FID Screen for extractable organics. In addition, the presence of volatile hydrocarbons will be qualitatively assessed using a portable photoionization detector (H-Nu) and by evaluating the odor of the samples. If there are indications of volatile hydrocarbons from the screening, then identified samples will be submitted to a testing laboratory and analyzed for aromatic volatile hydrocarbons (BTEX) by EPA method 8020.

The excavated soils will be stored temporarily on a lined (e.g., Visqueen) stockpile located in an area of the site designated by First Interstate. The chemical testing results will guide our recommendation on appropriate disposal of the soil. Soil disposal costs are not considered in the project budget.

For cost estimating purposes, we have assumed that three samples will be collected from the tank area and analyzed for TPH and BTEX. One of these samples will be additionally analyzed for the GC/FID Screen. A matrix spike sample and a matrix spike duplicate will also be analyzed to assure quality control of the data.



Upon the receipt of lab data indicating acceptably low levels of product residues in the excavation pit, it will be backfilled and compacted with clean fill. The excavated soils will then be transported to appropriate disposal with the authorization of costs from First Interstate. The asphalt cover in the area will be completed over the filled excavation.

If contaminated soils above acceptable levels are found in the excavation due to a leak or surface spills of product, this condition will constitute a change in scope of work; and Hart Crowser will notify First Interstate and negotiate the scope of additional work to rectify the condition.

Task 2B

**Alternative
Option**

Underground Storage Tanks - Soil Gas Survey/Tightness

Test Option - Under this option, the underground tanks would be left in place. Our approach would be to establish that the tanks have not leaked. The tank area can be evaluated for past leaks using a soil gas survey. In this survey, holes are drilled through the asphalt cover and gas monitoring probes are pounded into the ground to a depth slightly above the expected water table. A vacuum device is used to extract soil gas from the general subsoil area at the end of the probe. The soil gas sample is collected in a plastic bag (Tedlar material) and is evaluated for presence of the volatile constituents of gasoline (benzene, toluene, xylene) by portable gas chromatography (Photovac 10S50). The presence of the volatile compounds would indicate a past leak of the tank system which will require removal of the tanks and further evaluation (as in Task 2A). The absence of the volatile compounds in soil gas indicates



no past leak of the tanks is likely. This finding will be followed by confirmatory tightness tests for both tanks to establish that the tanks are not presently leaking.

Task 3

Surface Contamination Investigation - Figure 4 shows four areas (1 through 4) of the site which were observed to be contaminated with apparent oil and solvent or steam cleaning residues. Photographs 2, 3, 4, 5, 7, 8, and 9 in Appendix A show the visual findings. The concern for these areas is the possible presence of chlorinated or volatile solvents, PCBs, or heavy metals in the oil-stained soils. These compounds can be mobilized and represent a threat to site groundwater or surface drainage which leads to the Duwamish Waterway.

Hart Crowser will collect composite samples from a grid system placed within each of the four areas indicated on Figure 4. The samples will be evaluated for the contaminants as listed in Table 1. A total of 10 samples will be analyzed, one each from Areas 1 and 2, and 4 each from Areas 3 and 4. In addition, the presence of volatile hydrocarbons (e.g., aromatic and halogenated) will be qualitatively assessed using a portable photoionization detector (H-Nu). If there are indications of volatile hydrocarbons based on the field evaluation, laboratory confirmation may also include testing for volatile organic compounds (GC/MS). Two tests for this parameter are budgeted in this proposal.



Table 1 - Proposed Surface Soil Quality Analysis

<u>Analytical Parameter</u>	<u>Method Number</u>
Pesticides/Polychlorinated Biphenyls (PCBs)	Method 8080
Extractable Metals (As, An, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Th and Zn)	Method 1310/6010 or Method 1310/7000 series
Volatile Organics Compounds	Method 8240

Task 4

Subsurface Soil Evaluation - Subsurface soil samples will be collected from four subsurface borings numbered 1, 2, 3, and 4 in the areas indicated on Figure 4. A hollow-stem auger will be advanced at each boring location to a depth of 10 feet. A split-spoon soil sampler will be driven ahead of the auger at 2.5-foot-depth intervals to collect discrete soil samples.

The soil samples will be placed in clean glass jars and screened for the presence of volatile organic compounds with a field instrument (H-Nu photoionizer). The samples will be observed for visual and odor indications of contamination. Either a composite or one discrete soil sample from the depths of 2.5 feet to 10.0 feet in each boring will be selected for the tests indicated in Table 2.



Table 2 - Proposed Subsurface Soil Quality Analysis

<u>Analytical Parameter</u>	<u>Method Number</u>
Polychlorinated Biphenyls (PCBs)	Method 8080
Extractable Metals (As, An, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Th and Zn)	Method 1310/6010 or Method 1310/7000 series
Volatile Organics Compounds	Method 8240
GD/FID Screen	BAN Screen

If the selected sample indicates the presence of volatile organics from the field screening, then an additional analysis will be performed on that sample. The analysis will be for Volatile Organic Compounds (EPA Method 8240). Two tests for this parameter are budgeted in this proposal.

Task 5

Groundwater Evaluation - The approach to evaluating impacts to groundwater on the site is to place monitoring wells in presumed downgradient positions from locations of probable past and present sources of potential contaminants. Boring 4 from Task 4 and two additional borings (Boring 5 and 6, Figure 4) will be advanced to approximately 5 feet below the water table. Subsurface soil samples from the length of the borings will be collected in accordance with the method described in Task 4. The sample representing the depths of 0 to 2.5 feet will be analyzed as a discrete sample for parameters in Table 2. A composite sample will be analyzed for samples collected from a depth of 2.5 feet to the end of the boring. The three borings (4, 5, and 6) will be converted into monitoring wells by



telescoping 2-inch-diameter PVC screen and riser pipe through the auger center. A clean silica sand pack will be placed around the screen and a grout seal will be installed above the screen to prevent surface water from migrating downward along the well bore. Flush mounted, lockable monuments will complete the well installation.

After the wells have been installed and developed (fine sediment removed from well), groundwater samples will be obtained during a low tide period for chemical analysis. Temperature, pH, and electrical conductivity will be measured in the field. The samples will be analyzed for the parameters as detailed in Table 3. A total of 3 water samples will be tested, one from each well.

Table 3 - Proposed Water Quality Analysis

<u>Analytical Parameter</u>	<u>Method Number</u>
Dissolved Metals	Method 6010/7000 series
Volatile Organics	Method 8240
Pesticides/PCBs	Method 8080
Semivolatile Organics	Method 8270

Water level data will be obtained from the three wells to evaluate the general groundwater flow directions. Because the groundwater system is likely hydraulically connected to the Duwamish Waterway and dock area (Slip 3), surface water levels will be measured simultaneously with the water levels in the wells. Prior to the water level monitoring, we will survey the well elevations and surface water measuring points to a known site elevation or to a relative datum. Water levels in the waterway and the wells will then be measured (intermittently over



a 24-hour period) to evaluate the effect of the tides on the groundwater system and to develop an understanding of the movement of the water table across the site. Data from the water level monitoring and from the samples collected during the drilling of the well will be used to describe the subsurface hydrogeologic conditions.

Task 6A

Proposed
Option

Qualitative Evaluation of Sediments of Slip Number 3 -

Hart Crowser will compile and evaluate existing data on sediment for the region of the Duwamish Waterway near Slip Number 3. We will request and review available sediment data reports and study information at the EPA, Ecology, U.S. Army Corps of Engineers, Port of Seattle, and Puget Sound Water Quality Authority. Hart Crowser's broad range of experience and services in marine dredging and disposal will aid in interpreting the data for the Duwamish Waterway. We will interpret it in terms of how it may reflect potential sediment contamination in Slip Number 3 associated with stormwater drainage, shipbuilding, miscellaneous port activities, and river drainage.

Task 6B

Alternative
Option

Synchrolift/Drydock Submerged Sediment Area - In

order to definitively assess sediment quality in Slip 3, sample collection and chemical evaluation are necessary. Due to the present lack of reliably established and EPA-approved protocols for analyzing TBT in sediments, and the high probability of its presence in Slip 3, we do not believe that it would be a wise use of funds to test for this compound since only research methods are available for analysis at this time. However, we will review the available information



from the Corps and provide a discussion as to the TBT levels determined in the Duwamish Waterway and the liability implications of concern for TBT in sediments to owners of the site.

Also for Slip 3 sediments, with the work in this Task, we will establish a profile of contamination by other toxicants of concern by collecting samples for chemical analysis. Chemical testing procedures will be in general accordance with the PSDDA protocol (PSDDA, 1988). The results of this analysis will provide chemical contamination and general deposition information. This will allow interpretation of the findings in terms of the extent of any identified contamination. The contamination data collected for the sediments will allow projections as to the financial impacts on the property owner from pending regulations governing tainted submerged sediments and dredge spoils disposal.

We propose sediment sampling at three locations as shown on Figure 4. The sampling locations are distributed between the upper extent of Slip 3 (near Fox Avenue South) and the entrance to the Duwamish Waterway. To adequately represent the site, samples submitted to the laboratory will consist of composites of three samples collected at those specific locations. To obtain sufficient material for all required analyses, samples will be collected by a surface operated 3-foot-long piston corer deployed from a boat. The piston core liner will be composed of either cellulose acetate butyrate (CAB) or aluminum tubing with dimensions of approximately 2 to 4 inches in diameter and 36 inches in



length. After collection, sediment cores will be sectioned into 2-1/2-foot-long intervals. Samples will also be composited by depth. Actual sampling will be done by Williamson and Associates of Seattle, Washington, under observation by Hart Crowser personnel. A bid for the sample collection work is included in Appendix D. In the event of poor sediment recovery surface sediments will be collected with a Van Veen grab sampler.

A total of eight (8) samples will be submitted to Laucks laboratory in Seattle, Washington for chemical testing. This includes a matrix spike and a matrix spike duplicate that will be analyzed for laboratory QC purposes. The samples will be analyzed for the parameters listed in Table 4.

Table 4 - Proposed Slip 3 Sediment Quality Analysis

<u>Analytical Test</u>	<u>Method Number</u>
Volatile organic compounds	Method 8240*
Semivolatile organic Compounds	Method 8270*
Pesticides/PCBs	Method 8080*
Total metals (An, As, Cd, Cu, Pb, Hg, Ni, Ag, Zn)	Method 6010/7000*

* These testing methods include the 58 individual chemicals or chemical groups of concern for dredging and disposal operations (PSDDA, 1988).

Task 7

Data Evaluation and Report Preparation - The following reports will be prepared to present our findings and data evaluation.



Drum Content Identification/Disposal

A letter report will be prepared which documents the disposal of the drums of chemical waste upon the completion of the disposal process. It will include chemical data from the identification of drum contents, copies of manifests for the transport of the materials, and certificates of disposal indicating the final disposition of the material.

Asbestos Survey Results

The findings of the asbestos survey will be presented in a letter report along with an estimate of associated removal costs for positively identified asbestos in the site structures.

A comprehensive formal report will be prepared to document the findings from all remaining task items. A separate section of the report will address each of the Task findings as discussed below.

2A - Underground - Tanks Removal Option

The data determined from the findings of the removal of the underground storage tanks will be presented in a section of the formal report. It will include sample results from analysis of stockpiled excavation soil and of samples collected from the excavation walls and bottom. We will present a summary of field activities which document the removal process and verification of acceptable levels of residual materials in the backfilled area of the excavation.



2B - Underground Tanks - Soil Gas Survey Option

The data generated from the soil gas survey will be presented in a section of the report. It will present the measured soil gas levels and the results of the tightness test if no soil gas contamination is detected. We will make recommendations as to appropriate action for upgrading the tank facility on the site to meet proposed regulations for underground storage tanks.

Chemical Evaluation of Site Soils, Groundwater, and Data Review on Duwamish Sediments

Major sections of the report will present the findings and interpretation of data gathered from implementing Tasks 3, 4, 5, and 6. Surface and subsurface soil contamination data will be compared to hazardous waste criteria to determine if soil on the site represents a designated hazardous waste. The findings of soil contamination will be reviewed in light of the "How Clean Is Clean" policy of Ecology.

The soils and groundwater data will be compared to relevant Maximum Contaminant Levels (MCLs) established by EPA such as fresh and marine water quality criteria. A conceptual model of the subsurface conditions including geologic units, groundwater flow directions, and potential for contaminant transport will be presented for the site.

In the report, we will present a scenario of probable requirements for cleanup actions on the site based on



general data for the toxicity and mobility of the determined compounds in light of the target receptor, the Duwamish Waterway. We will advise on the need for evaluating risks to human or environmental health from the discovered levels of contamination. Any additional investigation of contamination issues or cleanup actions requisite to the environmental status of the site will be discussed.

Task 6A - Duwamish Waterway Sediment Data Review

A review and synthesis of existing chemical data on the Duwamish Waterway sediments will be used to qualitatively designate the likely environmental status of sediments in Slip 3. If existing data concentrations of chemicals of concern are in excess of PSDDA SL Chemistry guidelines, sediments may not be suitable for unconfined in-water disposal. This situation has liability implications to the property owners for site activities involving sediments. Hart Crowser will provide generalized cost considerations for dredging and disposal of sediments based on the existing chemical data of the Duwamish Waterway region.

Task 6B - Slip 3 Sediment Evaluation

As part of the formal report for Task 6B, we will present a section which quantitatively describes the chemical status of the submerged sediments collected in Slip 3 and interpret test results within the framework of PSDDA. TBT data on Duwamish Waterway sediments from the Corps will be included. Recommendations will be made in regard to liabilities for disposal of



contaminated dredge spoils from Slip 3, under current and pending regulations.

From the data, we will designate appropriate disposal methodologies and disposal sites for Sediment 3 dredge spoils. For these, we will present specific unit cost estimates to represent the liabilities to the property owner.

Task 8

Project Management/Administration - This task is included to provide for on-going coordination, scheduling, and management of field tasks, laboratory interaction, and handling and processing of data and information involved in the completion of each task effort. Telephone communication with First Interstate and office to field coordination of changes to scope, and two meetings with First Interstate are included in this task. It is expected that our meeting will be necessary to arrange authorization of drum disposal and associated paperwork. An additional meeting will allow a final summary meeting with First Interstate for presentation of the Task 7 Formal Report findings and recommendations. Tracking of project costs, billing information, and other administrative handling activities are included.



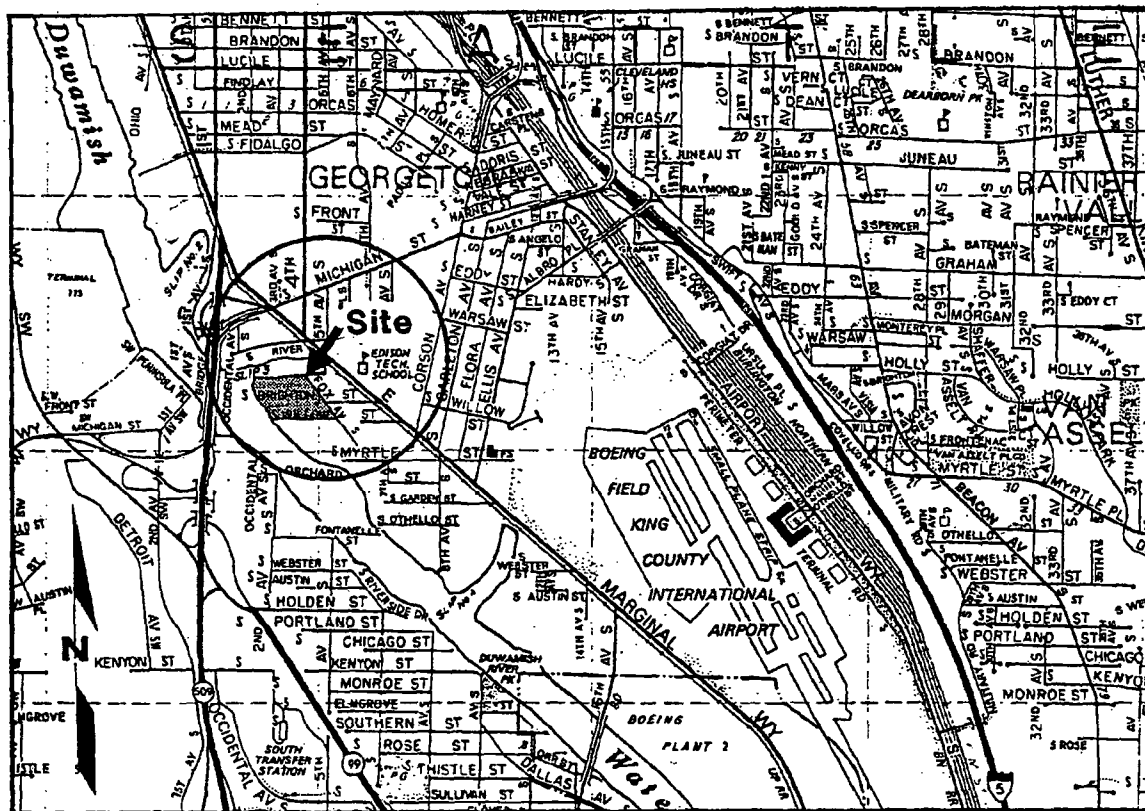
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REFERENCES

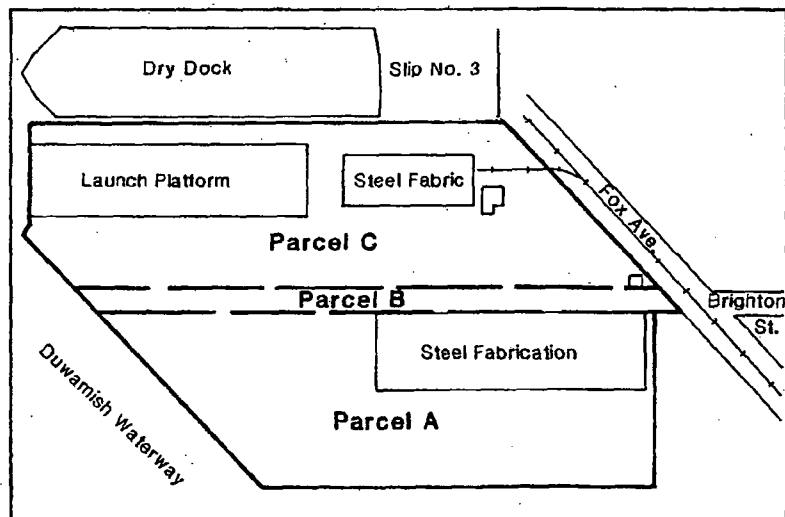
REFERENCES

United States Army Corps of Engineers, June, 1988, "Evaluation
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PSDDA Reports.

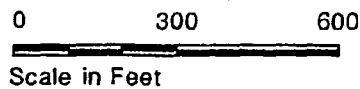
Site Vicinity and Layout Plan



Base map prepared from Thomas Guide map 26 of King County, Washington, 1988 updated edition.



Base map prepared from drawing entitled "M P & E Yard 4 Layout," by



0 2000 4000
Scale in Feet

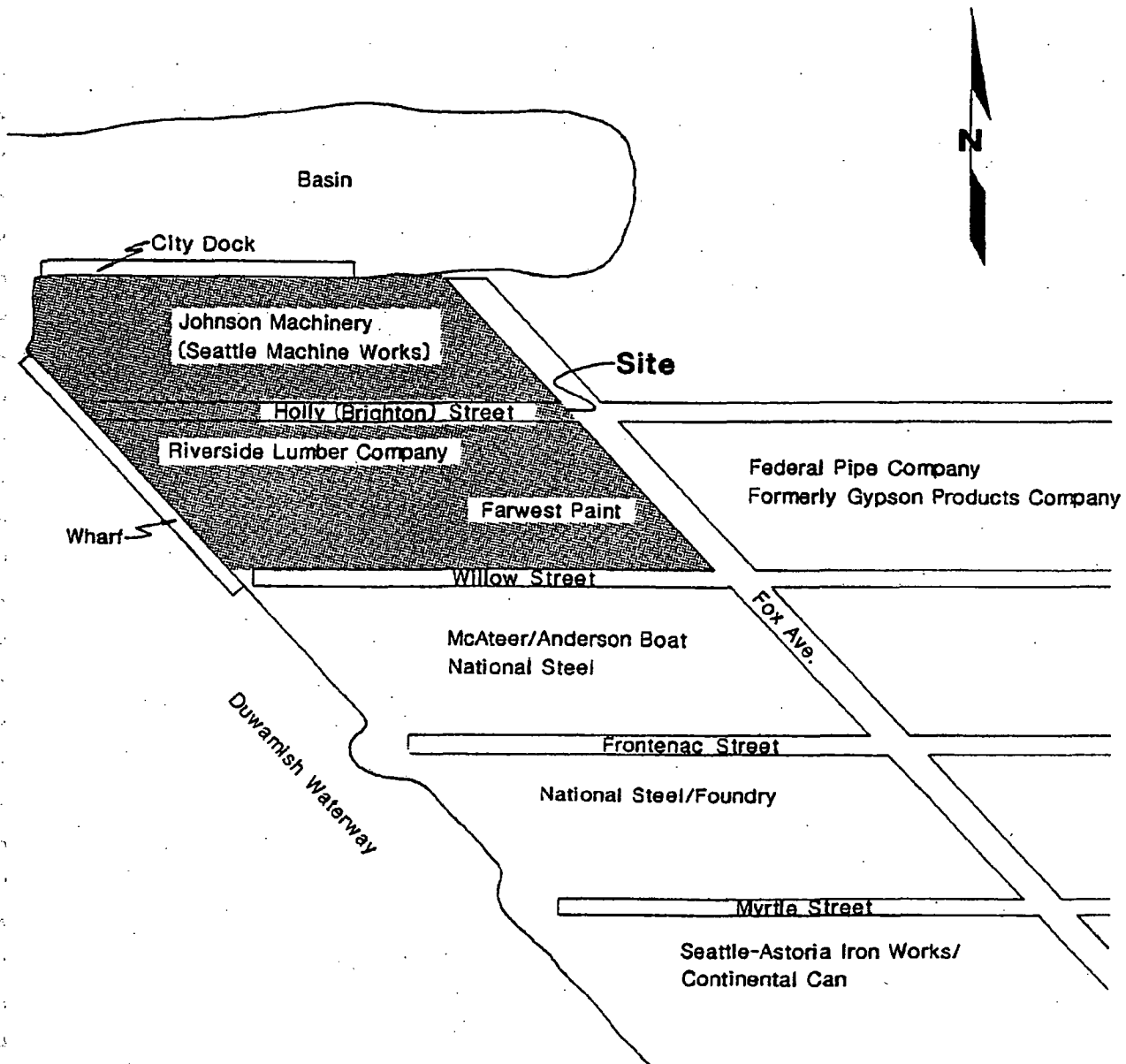


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Figure 1

Former Site Occupants Names and Locations



NOT TO SCALE



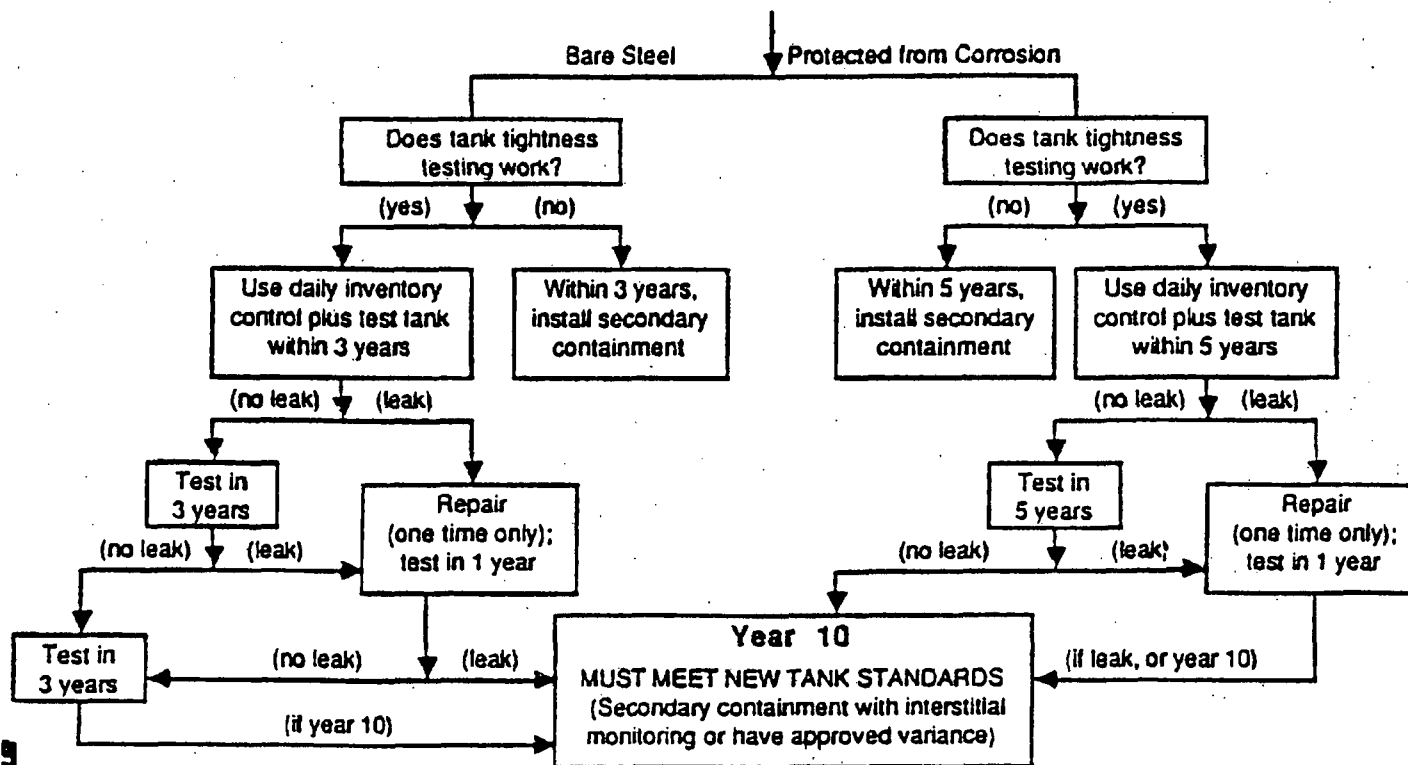
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Figure 2

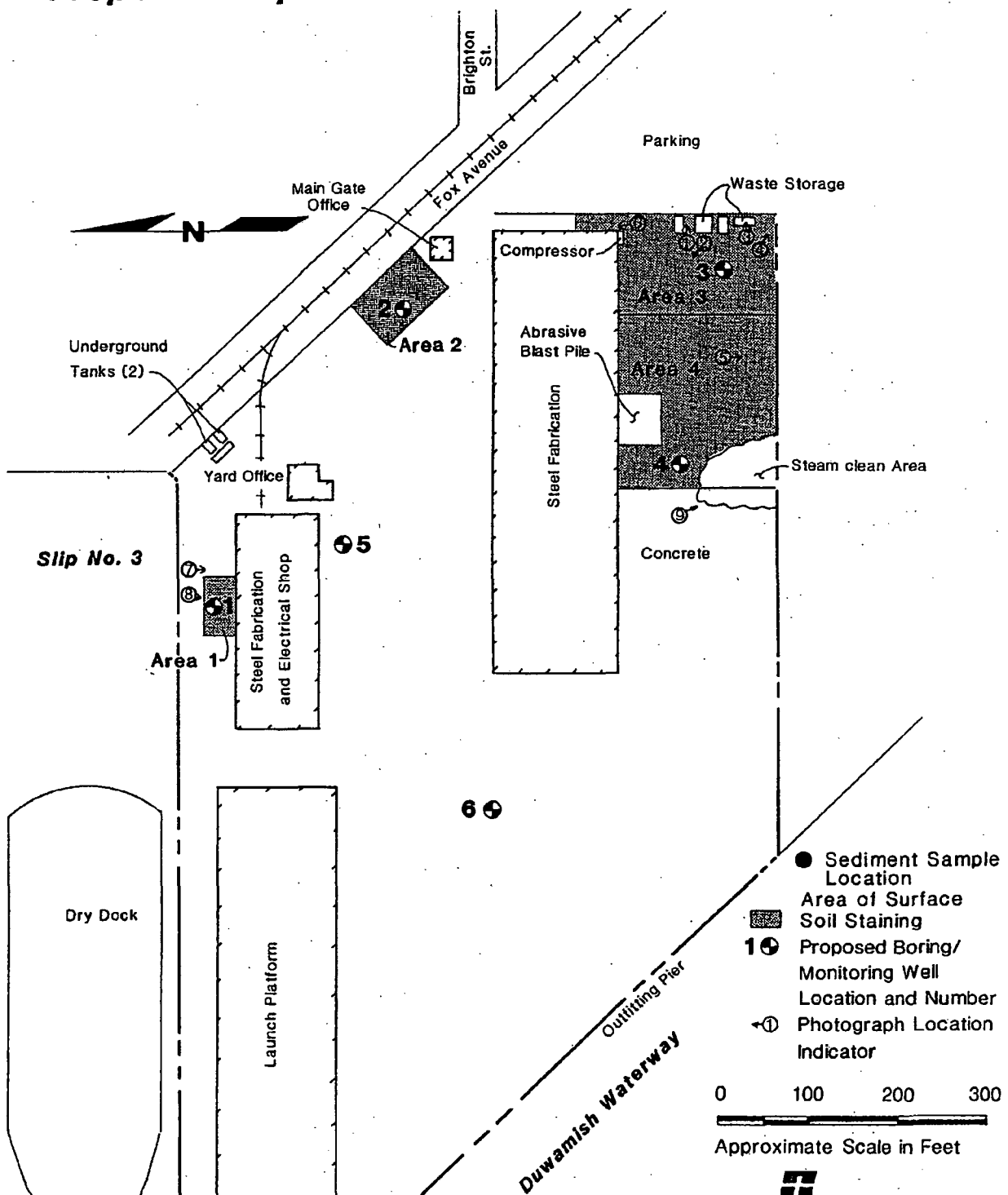
Proposed Regulatory Requirements for USTs

Minimum Leak Detection Requirements



(Simplified -- Does not reflect all requirements.)

Proposed Exploration Plan



Base map prepared from drawing
entitled "M P & E Yard 4 Layout,"
by

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Figure 4

Cost and Schedule



COST AND SCHEDULE

Cost

The estimated costs for accomplishing the proposed scope of work and analytical evaluation of samples for this project are tabulated by Task item as shown in the Tables 5, 6, and 7. Table 5 shows the overall summary of costs which reflect the choice of optional Task 6A for assessing sediment liability. Table 6 indicates the higher costs for project work if optional Task 6B is chosen. The removal option (Task 2A) for the two tanks is figured in both estimates. If Task 2B (soil gas survey/tightness test) is preferred at a cost of about \$4,500, then overall costs would drop about \$4,200, the amount of the difference between costs for 2A and 2B.

Costs for disposal of drums of hazardous waste are not included. This cost will be dependent upon the outcome of identification of contents and will be brought to your attention for authorization. For planning purposes, a median cost for disposal is \$350 or \$45 for 55-gallon drums or 5-gallon containers, respectively; or roughly \$10,350 for the total 65 drums/containers. The total estimated cost for the proposed work, not including drum disposal is \$73,700 which will be billed monthly as a lump sum, on a percent of project completed basis.

Schedule

The project will be completed in the sequence and calendar as presented on the Figure 5 - "Conceptual Project Schedule."

In the event that project requirements change or unforeseen conditions are encountered which require



FIRST INTERSTATE BANK
OF WASHINGTON

Cost and Schedule

additional work beyond the agreed scope of work, we will bring these to your attention and seek your approval for an addendum to the lump sum cost. The attached Terms and Conditions and any exhibits or attachments referenced herein are incorporated into our agreement with you and by your authorization to proceed, you are agreeing to those terms and conditions.

Our services will be performed in accordance with generally accepted professional practices, related to the nature of the work accomplished, in the same or similar localities, at the time the services are performed. No other conditions, express or implied, should be understood.

If you agree to authorize this work according to the above outlined scope of work, cost, and terms and conditions, then please have this letter signed by the appropriate authority and return a signed copy to Hart Crowser, Inc. If you desire to discuss the scope of work, cost, or terms and conditions, or if you have any questions, please call. Any changes to our agreement with you must be in writing and mutually agreed to.



FIRST INTERSTATE BANK
OF WASHINGTON

Cost and Schedule

We appreciate this opportunity to submit this proposal
and look forward to your favorable consideration.

Sincerely,

HART CROWSER, INC.

APPROVED:

John R. Funderburk, III
JOHN R. FUNDERBURK, III
Environmental Specialist

(Signature)

Richard D. Pierce
RICHARD D. PIERCE
Associate

(Name and Title
- Please Print)

JRF/RDP:taa

(Company)

Attachments:

Terms and Conditions (HAZ)
Figures 1 through 5
Appendix A-Site Photographs
Appendix B-Bid for Drum and
Container Removal
Appendix C-Bid for Tank Removal
Appendix D - Bid for Slip 3
Sediment Sampling

(Date)

ENVIRONMENTAL ASSESSMENT AND MITIGATION - MPE SITE

Table 5 - Estimated Costs (Labor, Direct, and Subcontract) By Task

Task 1 - Drum and Asbestos Sampling				Task 5 - Groundwater Evaluation							
Task 2A- UST Removal				Task 6A- Sediment Data Review							
Task 3 - Surface Soil Evaluation				Task 7 - Data Evaluation And Formal Report							
Task 4 - Subsurface Soil Evaluation				Task 8 - Project Management/Administration							
Personnel	Task 1	Task 2A	Task 3	Task 4	Task 5	Task 6A	Task 7	Task 8	Hours	Rate	Cost
Associate	3	3	3	3	2	5	3	5	27	\$90	\$2,430
Project Manager	4	5	6	6	6	6	18	18	69	\$75	\$5,175
Hydrogeologist	0	0	2	1	26	0	20	0	49	\$65	\$3,185
Geologist	0	0	3	20	24	0	10	2	59	\$55	\$3,245
Environmental Spclst.	18	4	14	0	3	0	12	5	56	\$35	\$1,960
Geochemist	0	0	4	4	4	16	40	8	76	\$55	\$4,180
Engineer	0	12	0	0	0	0	6	4	22	\$50	\$1,100
Drafting	2	2	3	4	5	2	8	2	28	\$45	\$1,260
Word Processing	3	2	3	3	6	1	16	4	38	\$35	\$1,330
TASK SUBTOTAL:	\$1,395	\$1,545	\$1,965	\$2,390	\$4,400	\$1,905	\$7,310	\$2,955	HC Labor: \$23,865		
DIRECT COSTS:											
HC Equipment (Safety)		\$150	\$200	\$390	\$300						\$1,040
Hazardous Surcharge	\$90	\$80	\$115	\$125	\$285	\$0					\$695
Travel (0.40/mile)	\$10	\$10	\$10	\$20	\$40	\$10		\$10			\$110
Per Diem (\$65/day)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$0
Miscellaneous Costs	\$20	\$50	\$20	\$75	\$50	\$0	\$200	\$200			\$615
SUBCONTRACT (Cost reflects HC 12% markup):										Direct Costs: \$2,460	
NWES	\$14,100										NWES \$14,100
OLYMPUS		\$7,200									OLYMPUS \$7,200
Drilling				\$5,030							Drilling \$5,030
Williamson & Assoc.						\$0					Wllmsn. \$0
Laboratory	\$338	\$700	\$7,336	\$3,786	\$8,880	\$0					Lab \$21,040
		975									
PROJECT TOTAL										\$73,695	

89-40-1007

ENVIRONMENTAL ASSESSMENT AND MITIGATION - MPE SITE

Table 6 - Estimated Costs (Labor, Direct, and Subcontract) By Task

Task 1 - Drum and Asbestos Sampling			Task 5 - Groundwater Evaluation								
Task 2A- UST Removal			Task 6B- Sediment Evaluation								
Task 3 - Surface Soil Evaluation			Task 7 - Data Evaluation And Formal Report								
Task 4 - Subsurface Soil Evaluation			Task 8 - Project Management/Administration								
Personnel	Task 1	Task 2A	Task 3	Task 4	Task 5	Task 6B	Task 7	Task 8	Hours	Rate	Cost
Associate	3	3	3	3	2	5	3	5	27	\$90	\$2,430
Project Manager	4	5	6	6	6	6	18	18	69	\$75	\$5,175
Hydrogeologist	0	0	2	1	26	2	20	0	51	\$65	\$3,315
Geologist	0	0	3	20	24	0	10	2	59	\$55	\$3,245
Environmental Spclst.	18	4	14	0	3	0	12	5	56	\$35	\$1,960
Geochemist	0	0	4	4	4	20	60	8	100	\$55	\$5,500
Engineer	0	12	0	0	0	0	6	4	22	\$50	\$1,100
Drafting	2	2	3	4	5	3	8	2	29	\$45	\$1,305
Word Processing	3	2	3	3	6	3	16	4	40	\$35	\$1,400
TASK SUBTOTAL:	\$1,395	\$1,545	\$1,965	\$2,390	\$4,400	\$2,370	\$8,410	\$2,955	HC Labor: \$25,430		
DIRECT COSTS:											
HC Equipment (Safety)		\$150	\$200	\$390	\$300						\$1,040
Hazardous Surcharge	\$90	\$80	\$115	\$125	\$285	\$110					\$805
Travel (0.40/mile)	\$10	\$10	\$10	\$40	\$40	\$10		\$10			\$130
Per Diem (\$65/day)	\$0	\$0	\$0	\$0	\$0	\$0					\$0
Miscellaneous Costs	\$20	\$50	\$20	\$75	\$50	\$25	\$200	\$200			\$640
SUBCONTRACT (Cost reflects HC 12% markup):											
NWES	\$14,100										\$14,100
OLYMPUS		\$7,200									\$7,200
Drilling				\$5,030							\$5,030
Williamson & Assoc.						\$1,440					\$1,440
Laboratory	\$338	\$700	\$7,336	\$3,786	\$8,880	\$10,260					\$31,300
9735											
Direct Costs:										\$2,615	
PROJECT TOTAL \$87,115											

89-40-1007



89-40-1007

Table 7 - Laboratory Costs By Task

Task 1 - Asbestos Survey

10 bulk samples for asbestos content- polarized light microscopy @ \$30	\$ 300
Subtotal	\$ 300

Task 2 - Underground Tank Removal

TPH	3 samples @ \$75/sample	\$ 225
BTEX	3 samples @ \$100/sample	300
GC/FID Screen	1 sample @ \$100/sample	100
Subtotal		\$ 625

Task 3 - Surface Analysis

PCBs	10 samples @ \$230/sample	\$2,300
Priority ExtractableMetals	10 samples @ \$365/sample	3,650
Volatiles	2 samples @ \$300/sample	600
Subtotal		\$6,550

Task 4 -Subsurface Soils Analysis

PCBs	4 soils @ \$230/sample	\$ 920
P.P. ExtractableMetals	4 soils @ \$365/sample	1,460
Volatile Organics	2 soils @ \$300/sample	600
GD/FID	4 soils @ \$100/sample	400
Subtotal		\$3,380



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Table 7 (continued)

Task 5 - Monitoring Wells

Additional Borings -

PCBs	6 soils @ \$230/sample	\$1,380
P.P. Extractable Metals	6 soils @ \$365/sample	2,190
Volatile organics	2 soils @ \$300/sample	600
GC/FID Screen	6 soils @ \$100/sample	<u>600</u>
Subtotal		\$4,770

Groundwater Samples -

P.P. Dissolved Metals	3 water @ \$318/sample	\$ 954
Volatile organics	3 water @ \$225/sample	675
PCBs	3 water @ \$140/sample	420
Semivolatile organics	3 water @ \$370/sample	<u>1,110</u>
Subtotal		\$3,159

Total Laboratory Costs	\$18,784
Hart Crowser Mark-up (12%)	<u>2,256</u>

Total Without Task 6B Costs \$21,040

Optional Task 6B - Submerged Sediments Analysis

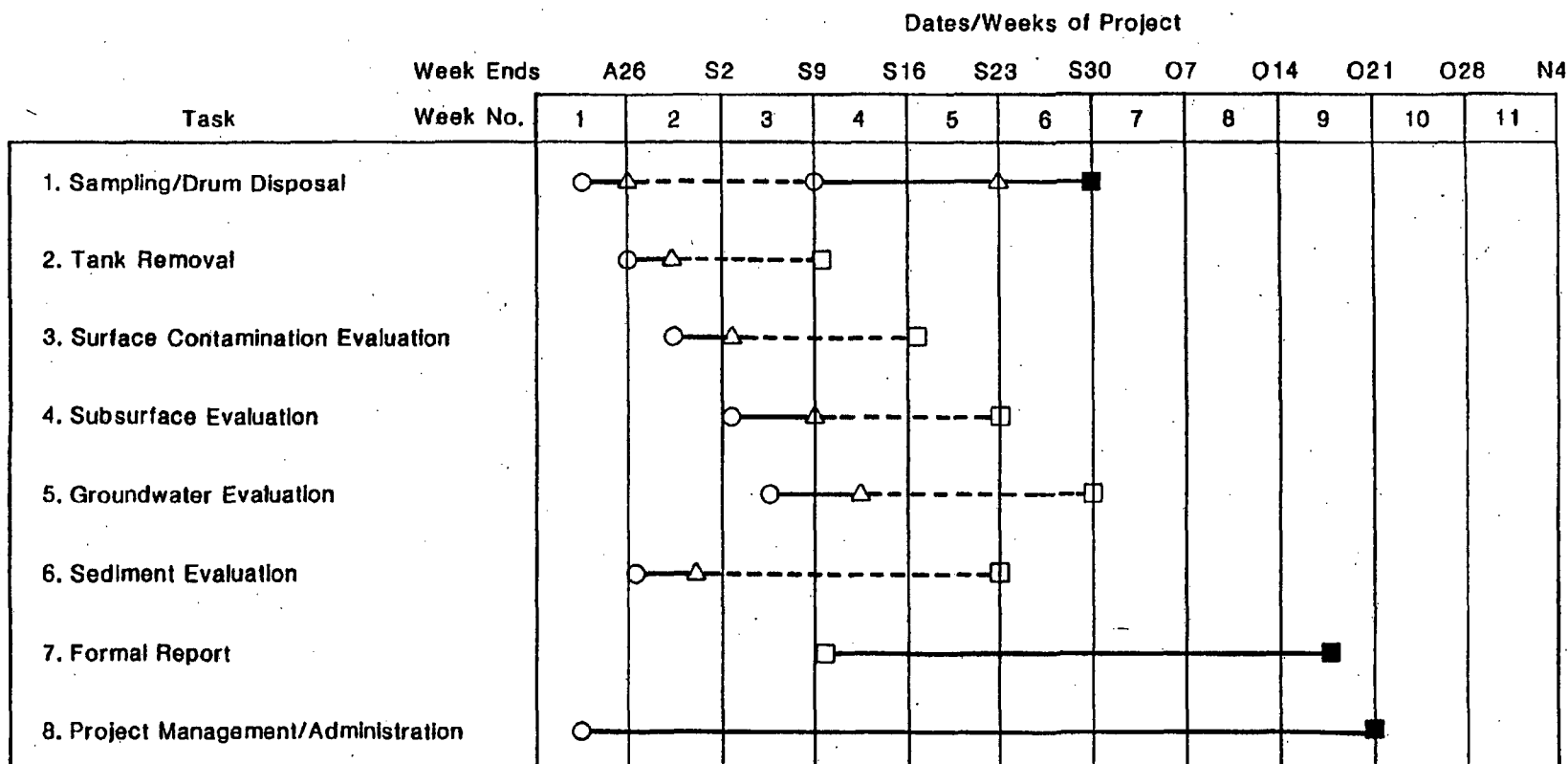
VOAs (GC/MS)	8 samples @ \$300/sample	\$2,400
Semivolatile (GC/MS)	8 samples @ \$390/sample	3,120
Pesticides/PCBs	8 samples @ \$230/sample	1,840
Total metals	8 samples @ \$225/sample	<u>1,800</u>
Subtotal		\$ 9,160

Total Including Task 6B Costs	\$27,944
Hart Crowser Mark-up (12%)	<u>3,356</u>

Overall Total \$31,300

**First Interstate Bank
Marine Power and Equipment Site**

Conceptual Project Schedule



- Start
- △ Completion
- Lab Analysis
- Report Section Start
- Project Report Completion

Figure 5

TERMS AND CONDITIONS

1. **SERVICES TO BE PROVIDED AND STANDARD OF CARE** HART CROWSER agrees to provide CLIENT, for its sole benefit and exclusive use, consulting services set forth in HART CROWSER's proposal. HART CROWSER's services shall be performed in accordance with generally accepted professional practices, in the same or similar localities, related to the nature of the work accomplished, at the time the services are performed.

2. **PAYMENT** Invoices will be submitted once a month for services performed during the prior month. Payment will be due upon receipt unless otherwise agreed. Interest will be added to accounts in arrears at the rate of one and one-half percent (1 1/2%) of the arrearage of each month of delinquency not to exceed the maximum percentage rate allowed by law. All expenses incurred by HART CROWSER for licensing or collecting any delinquent amount shall be paid to HART CROWSER by CLIENT. If at any time, present or future, the state or local government assesses a sales or use tax upon HART CROWSER for any of the supplies, testing, or services performed by HART CROWSER and/or its subcontractors under this AGREEMENT, then CLIENT agrees to directly pay such taxes, or should HART CROWSER elect to pay such taxes directly then CLIENT agrees to reimburse HART CROWSER in full.

3. **RIGHT OF ENTRY AND PROPERTY RESPONSIBILITY** CLIENT has responsibility for obtaining a right of entry to the property. The right of entry shall allow HART CROWSER, its agents, subcontractors, and employees to enter the property from time to time, as necessary to perform all acts, studies, and research pursuant to the agreed services. HART CROWSER has responsibility for its own activities on the property including the safety of its employees; it does not assume control of nor responsibility for the property, the person in charge of the property nor the safety of persons not in HART CROWSER's employ.

4. **INSURANCE** HART CROWSER maintains Workers' Compensation and Employer's Liability Insurance for its employees as required by state laws. In addition, HART CROWSER maintains comprehensive general liability and auto liability insurance in the amount of \$500,000 combined single limits for bodily injury and property damage. HART CROWSER will not be responsible to CLIENT beyond the limits of this insurance.

5. **REPORTS, RECOMMENDATIONS, AND OWNERSHIP OF DOCUMENTS** Reports, recommendations, and other materials resulting from HART CROWSER's efforts are intended solely for purposes of this AGREEMENT; any reuse by CLIENT or others for purposes outside of this AGREEMENT or any failure to follow HART CROWSER's recommendations, without HART CROWSER's written permission, shall be at the user's sole risk. CLIENT will furnish such reports, data, studies, plans, specifications, documents, and other information deemed necessary by HART CROWSER for proper performance of its services. HART CROWSER may rely upon CLIENT-provided documents in performing the services required under this AGREEMENT; however, HART CROWSER assumes no responsibility or liability for their accuracy. CLIENT-provided documents will remain property of CLIENT. All reports, field notes, calculations, estimates, and other documents which are prepared, as instruments of service, shall remain HART CROWSER's property. HART CROWSER will retain all pertinent records relating to services performed for a period of six years following submission of a report, during which period the records will be made available to CLIENT at all reasonable times.

6. **HAZARDOUS SUBSTANCES AND CONDITIONS** CLIENT warrants that, if it knows or suspects that hazardous substances may exist on the property, it has so informed HART CROWSER. CLIENT also agrees that HART CROWSER has no responsibility as a handler, generator, operator, treater, storer, transporter, or disposer of hazardous substances found or identified at the project property.

7. **LIMITATION OF LIABILITY** CLIENT expressly agrees that to the fullest extent permitted by law, its maximum aggregate recovery for claims against HART CROWSER concerning HART CROWSER's professional services, including negligence or breach of this AGREEMENT shall be the amount of the fee paid HART CROWSER for professional services or \$50,000, whichever is less.

8. **INDEMNIFICATION** To the fullest extent permitted by law and in excess of the Limitation of Liability in Paragraph 7, CLIENT agrees to defend, indemnify, and hold HART CROWSER, its agents, subcontractors, and employees harmless from and against any and all claims, defense costs, including attorney's fees, damages, and other liabilities, arising out of or in any way related to HART CROWSER's reports or recommendations concerning this AGREEMENT, HART CROWSER's presence on the project property, or the presence, release, or threatened release of asbestos, hazardous substances, or pollutants on or from the project property; **provided that** CLIENT shall not indemnify HART CROWSER against liability for damages caused by or resulting from the sole negligence of HART CROWSER, its agents, subcontractors, or employees; and **provided further** that CLIENT shall indemnify HART CROWSER against liability for damages caused by or resulting from the concurrent negligence of (a) CLIENT, its agents, or employees and (b) HART CROWSER, its agents, subcontractors, or employees, only to the extent of CLIENT's negligence or the negligence of CLIENT's agents or employees.

9. **UNFORESEEN OCCURRENCES** If any unforeseen conditions or occurrences are encountered which, in HART CROWSER's sole judgment, significantly affect or may affect the recommended scope of work, then HART CROWSER will promptly notify CLIENT. After such notification, HART CROWSER will complete the original scope of work, if appropriate, or agree with CLIENT to modify the AGREEMENT, or terminate the AGREEMENT pursuant to Paragraph 10.

10. **TERMINATION** In the event that CLIENT requests termination of work prior to completion or HART CROWSER terminates work under Paragraph 9, HART CROWSER will be paid for all work performed up to notice of termination and for all expenses incurred or committed to that cannot be cancelled. HART CROWSER also has the right to complete at CLIENT's expense, the analysis and records HART CROWSER considers necessary to protect its professional reputation. A termination charge may also be made to cover proposal presentation and administrative costs related to the work.

11. **SAMPLING** (This paragraph applies when HART CROWSER is providing field testing and sampling services). All non-hazardous samples will be discarded 60 days after HART CROWSER completes its services unless different arrangements are agreed to in writing. All hazardous samples will be disposed in accordance with Paragraph 12. Unless otherwise agreed in writing, the costs of any surveying to determine the horizontal and vertical locations of sampling or test holes will be paid by CLIENT.

12. **DISPOSAL OF CONTAMINATED SAMPLES, MATERIALS OR EQUIPMENT** (This paragraph applies when HART CROWSER is providing field testing and sampling services.) Samples, materials, or equipment containing hazardous substances that are regulated under federal, state, or local environmental laws shall be returned to CLIENT at CLIENT's expense. Alternatively, CLIENT may request in writing, pay, and assume responsibility for HART CROWSER to have the contaminated samples, materials, or equipment transported to a disposal site in compliance with all applicable laws; HART CROWSER would be acting as a bailee and would not assume title to the contaminated samples, materials, or equipment. CLIENT also agrees to pay HART CROWSER the fair market value of all HART CROWSER's laboratory and field equipment used on the property which cannot be decontaminated and must be disposed of in accordance with this paragraph.

13. **SUBSURFACE RISKS AND SITE DAMAGE** CLIENT recognizes that special risks occur and "guarantees" cannot be expected whenever professional consulting services are applied to determine the composition of a site's subsurface or the existence or non-existence of hazardous substances. HART CROWSER cannot eliminate these risks altogether, but HART CROWSER can apply professional techniques to reduce the risks to a level deemed tolerable and CLIENT agrees to accept that level of risk. When HART CROWSER is providing field services, CLIENT recognizes that the use of exploration and test equipment may unavoidably damage or alter the property surface or subsurface and CLIENT agrees to assume responsibility for such unavoidable damages or alterations. Finally, CLIENT agrees to assume responsibility for personal and property damages due to HART CROWSER's interference with subterranean structures, such as pipes, tanks, and utility lines, that are not called to HART CROWSER's attention in writing or correctly shown on plans provided by CLIENT.

14. **SEVERABILITY AND SURVIVAL** Any element of this AGREEMENT later held to violate a law shall be deemed void, and all remaining provisions shall continue in force. However, CLIENT and HART CROWSER will in good faith attempt to replace any invalid or unenforceable provision with one that is valid and enforceable, and which comes as close as possible to expressing the intent of the original provision. All terms and conditions of this AGREEMENT allocating liability between CLIENT and HART CROWSER shall survive the completion of the services hereunder and the termination of this AGREEMENT.

15. **INTERPRETATIONS AND TIME BAR TO LEGAL ACTION** Interpretations and enforcement of this AGREEMENT shall be governed by the laws of the State of Washington. All legal actions by either party against the other related to this AGREEMENT, shall be barred after two years have passed from the time the claimant knew or should have known of its claim, and under no circumstances shall be initiated after four years have passed from the date by which HART CROWSER completes its services.

16. **PRECEDENCE** These Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice to proceed, or like document regarding HART CROWSER's services.

Appendix A



Photo 1 - Area 3 - Waste paint storage.



Photo 2 - Area 3 - Drums of waste chemicals. Note stained soil.

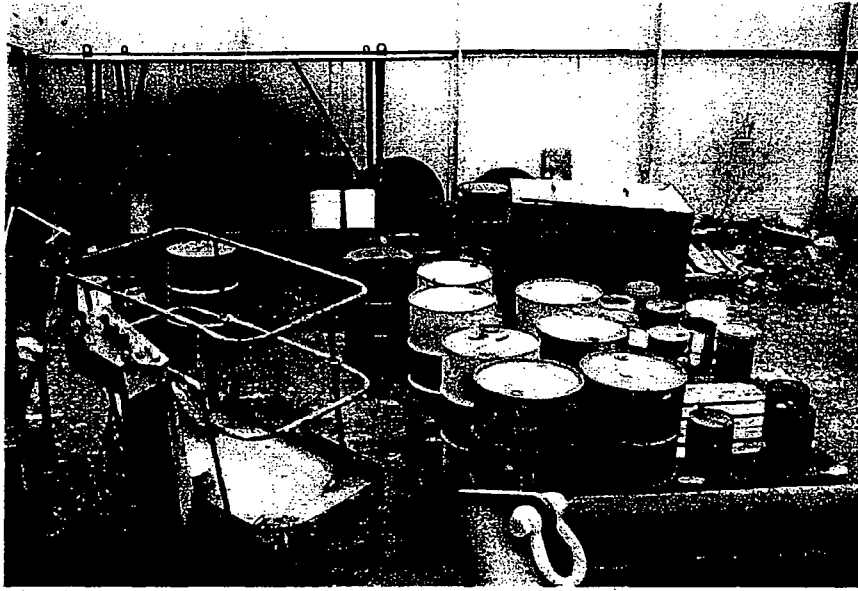


Photo 3 - Area 3 - Drums of waste chemicals. Note stained soil.



Photo 4 - Area 3 - Note stained soil.

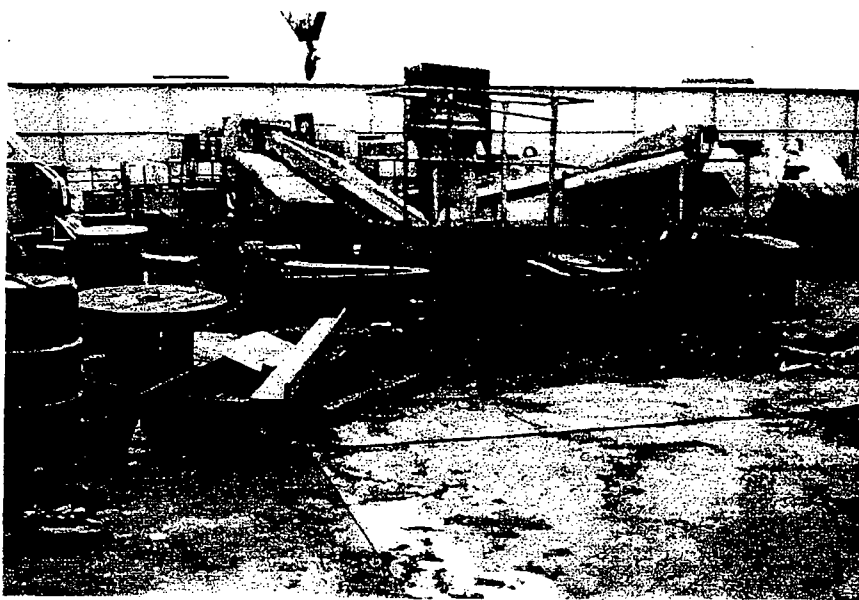


Photo 5 - Area 4 - Note stained soil.



Photo 6 - Area 3 - 55-gallon drums of waste chemicals.

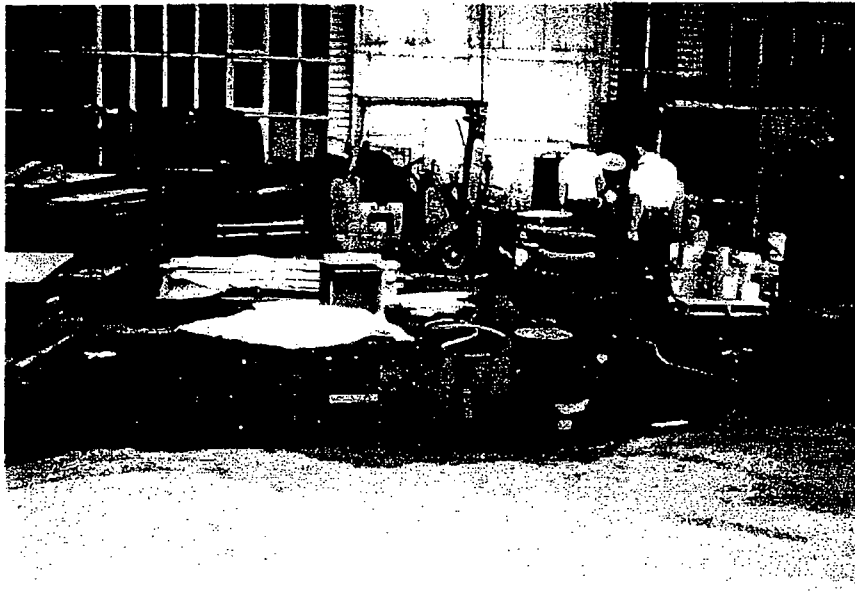


Photo 7 - Area 1 - Stained soil and waste chemicals.

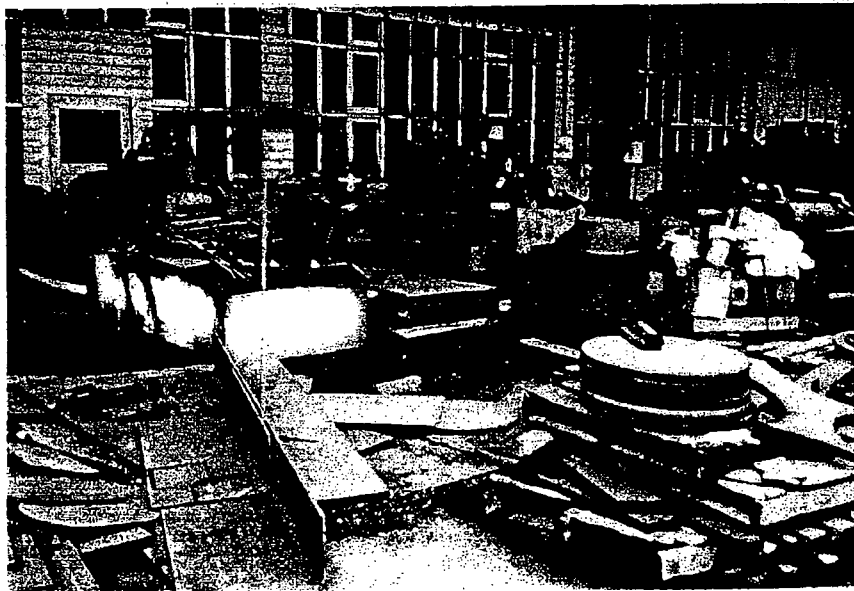


Photo 8 - Area 1 - Stained soil and waste chemicals.



Photo 9 - Area 4 - Steam cleaning area. Note soil staining in background.

Appendix B



**Northwest
EnviroService
Inc.**

August 9, 1988

Mr. John Funderburk
Hart Crowser
1910 Fairview Avenue East
Seattle, WA 98102

RE: Bid for Marine Power & Equipment Site

Dear John:

Enclosed per our telephone conversation this morning are the prices that would be incurred by Hart Crowser if Northwest EnviroService, Inc., would perform the disposal services at the above listed site.

The prices are as follows:

Consolidation and Sampling - \$2,928.00 (Completed within 3 - working days)

Lab Analysis - \$275.50 per each sample, composite sampling will be performed on like waste types. (Testing completed within 21 working days)

Mobilization and Transportation - \$1,088.00 (Completed within 2 - working days)

Disposal Full Drums

Chlorinated 55 gallon drums: \$635.00/drum

Chlorinated 5 gallon drums: \$ 50.00/drum

Disposal Full Drums

Non-Chlorinated 55 gallon drums: \$158.00/drum

Non-Chlorinated 5 gallon drums: \$ 25.00/drum

Disposal of Empty Drums

Empty 55 gallon drums: \$40.00/drum

Empty 5 gallon drums: \$25.00/drum

The first phase will begin upon NWES being awarded this bid, signed contract in place and the second phase will begin upon approval of completed waste product questionnaires.

Thank you for your consideration once again, as NWES servicing your disposal needs.

Sincerely,

NORTHWEST ENVIROSERVICE, INC.



Venessa M. Snedeker
Sales Administrator

Appendix C

OLYMPUS

Environmental Inc.

Kent, WA Portland, OR Helena, MT

August 8, 1988

Mr. John R. Funderburk
HartCrowser
1910 Fairview Ave., East
Seattle, WA 98102-9530

Dear John:

Olympus Environmental is pleased to present this proposal for the removal of the two-two thousand gallon underground storage tanks located at the Marine Power Facility, Seattle, WA. Olympus has the expert staff, equipment and experience to provide the most reliable and best documented services available today. Our field teams are flexible and we have the materials and resources needed to meet any probable contingency.

Scope of Work

The following is an approximate outline for the removal. The procedure is as follows: The fire department will be contacted for a permit and inspection prior to the removal of the tank. When the fire department makes its inspection the tank must be empty of all free liquids and inert with a carbon dioxide level of greater than sixty per cent and oxygen content of less than seven per cent. The concrete cap will be broken, removed and disposed of off site at an approved facility. At this time the tank will be extracted, placed on a truck and transported off site for cleaning, cutting and disposal. All State, Local and Federal regulations will be followed throughout the process.

Once the tank has been removed a composite sample will be gathered at the base of the tank and the side walls. This will indicate the petroleum concentration of the soils left in the ground. Under Washington State, Department of Ecology the current policy allows a maximum of 200 ppm total petroleum hydrocarbons. This data will assist the property owner if it is decided to sell the property and an environmental audit is requested by the lending institution. This also demonstrates that the tank removal was performed properly with no contamination left in the ground.

Once the soil sample have been taken the excavation will be filled with clean, compacted fill to the existing grade and the concrete will be replaced with a three inch asphalt cap. Olympus will also complete the Washington State Underground Storage Tank

Environmental & Hazardous Waste Services

25612 74th Ave. S. • Kent, Washington 98032 • (206) 854-5094

Notification Form. This will remove the tank from the States listing.

Documentation

Olympus will supply a complete data package. This data contains all the pertinent tank information such as; tank destination, laboratory results, tank notification forms etc. Olympus feels this is an important part of the removal. This provides an effective document should an environmental audit or site history take place.

Health and Safety

Olympus has instituted as company policy that all employees participate in a base line medical program. All employees have and continue to have many hours of health and safety training which includes but not limited to the proper procedures for level C and B level of protection, proper respiratory protection; half, full face respirators and SCBA. Personnel will be kept to a minimum during any procedure which is deemed potentially hazardous.

Cost: Marine Power Facility

The following is the cost for the removal of the tanks. Since the actual tank size is not known at this time all costing and disposal is based on two-two thousand gallon tanks.

TOTAL = \$6,431.00

Comments

1. Since the tanks are currently in use, it is assumed that both tanks will be empty off all free liquids prior to removal.
2. If the tank is found to be leaking Olympus can remain on site and perform the remedial clean-up and regulatory interface as required.
3. All underground utilities will be identified prior to the commencement of work by the property owner or his designate.
4. It is assumed that the tank has not been concreted in place. If the tank can not be removed, a work proposal will be submitted to the Seattle Fire Marshal's office for abandonment in place.
6. All safety procedures and laws will be followed.
7. Proof of insurance will be supplied prior to the start of the project.

8. Asphalt will be used to replace the concrete tank cap. The cost is for the tank area only. If it is requested the area south of the fuel island can be replaced on a time and materials basis.

The field team and I are enthusiastic about the prospect of working with you on this project. We look forward to hearing from you. If you have any questions or comments please do not hesitate to contact me. Olympus appreciates the opportunity to assist HartCrowser in their environmental concerns and looks forward to continuing in the future.

Sincerely,



Lawrence E. McGill
Program Manager

cc: W. Semon, Olympus
file

Appendix D

WILLIAMSON & ASSOCIATES, INC.

OCEANOGRAPHY AND MARINE GEOPHYSICS

1219 Westlake Ave. N.
Suite 111
Seattle, WA 98109
(206) 282-2396

Hart Crowser
1910 Fairview Avenue East
Seattle, WA 98102

August 8, 1988

ATTENTION: Mr. Mark Herrenkohl

Dear Mr. Herrenkohl:

As per your request Williamson and Associates have prepared the following cost estimate to perform one day of coring in the Duwamish waterway.

Based on our phone discussions it is our understanding that you require cores, 3 feet in length, to be obtained at six (6) selected locations. At each of the locations three (3) cores will be taken to acquire a sufficient quantity of sediment for analysis. A Van veen sampler will be provided if it is not possible to retain the sediments in the corer.

Upon notification to proceed we will perform the following tasks:

1. Check all coring and sampling equipment at our marine facility
2. Mobilize the boat and transport it to the study area.
3. Obtain the subsurface soil samples. All samples will be left with the Hart-Crowser representative on site.
4. Demobilize the field crew and equipment to our marine facility.

It is our understanding the Hart Crowser will provide: (1) a field technician, (2) the necessary sampling jars, and (3) will assume the responsibility for all logging and archiving of the samples.

Our costs associated with this one day sampling program are as follows.

MOBILIZATION	200.00	
SAMPLING	800.00	
DEMobilIZATION	200.00	TOTAL 1200.00

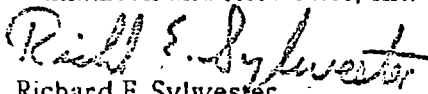
According to our discussion, on August 8th, you are still waiting for authorization to begin this project. We will attempt to begin the work as soon as possible following your notification. However, because of our schedule there may be a delay of initiation of the program. We will be able to confirm our schedule once you have provided us with the go-ahead.

If you require additional cost or technical information contact me at our office in Seattle (282-2396).

We look forward to working with Hart-Crowser on this project.

Sincerely,

Williamson and Associates, Inc.

A handwritten signature in cursive script, reading "Richard E. Sylwester".

Richard E. Sylwester
Senior Geophysicist



HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699
206.324.9530
Seattle Tacoma Anchorage